IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

On page 1, please replace paragraph [1003] with the following paragraph:

In a coherent communications system, such as code division multiple access ("CDMA"), a radio receiver, in general, should be in constant synchronization with the radio transmitter in order to maintain a constant connection with the transmitter. If the receiver loses synchronization, a loss of "lock" with the transmitter occurs. This situation often leads to a loss of service for the user of the wireless service.

On page 2, please replace paragraph [1008] with the following paragraph:

Known methods for determining and adjusting the delay offset for a FSE, such as using timing information of the strongest Rake finger as delay offset for the equalizer, have been found to be unreliable. There is, therefore, a need in the art for an effective method for determining and adjusting the delay offset for a fractionally spaced equalizer.

On page 3, please replace paragraph [1010] with the following paragraph:

The presently disclosed embodiments are directed to method and apparatus for determining a delay offset in a fractionally spaced equalizer. According to one aspect of the present invention, a weighted mean arrival time is used to determine a delay offset of a fractionally spaced equalizer. The weighted mean arrival time is determined by using arrival times and signal energies from a first and second Rake receiver. Let X denote the difference between the weighted mean arrival time and the current delay offset in units of the equalizer's tap spacing. Let $Q(z)$ denote the greatest integer not exceeding z. If $Q(|X|)$, also referred to as an incremental delay offset, is greater than or equal to 1, then the current delay offset is updated. Also, a plurality of filter coefficients are shifted <u>to</u> an integer number of tap spacings, $Q(|X|)$. Otherwise, if $Q(|X|)$ is 0, then the current delay offset is not updated and the plurality of filter coefficients of the linear equalizer are not shifted. Adaptation of the plurality of filter

coefficients of the linear equalizer occurs only during pilot bursts so as to minimize adaptation transients.

On page 6, please replace paragraph [1021] with the following paragraph:

The general principles of CDMA communication systems, and in particular, the general principles for generation of spread spectrum signal for transmission over a communication channel is described in U.S. ~~patent~~ Patent No. 4,901,307, entitled "Spread Spectrum Multiple Access Communication System Using Satellite or Terrestrial Repeaters," and assigned to the assignee of the present invention. The disclosure in that patent, i.e. U.S. ~~patent~~ Patent No. 4,901,307, is hereby fully incorporated by reference into the present application. Moreover, U.S. ~~patent~~ Patent No. 5,103,459, entitled "System and Method for Generating Signal Waveforms in a CDMA Cellular Telephone System," and assigned to the assignee of the present invention, discloses principles related to PN spreading, Walsh covering, and techniques to generate CDMA spread spectrum communication signals. The disclosure in that patent, i.e. U.S. ~~patent~~ Patent No. 5,103,459, is also hereby fully incorporated by reference into the present application. Further, the present invention utilizes time multiplexing of data and various principles related to "high data rate" communication systems, and the present invention can be used in a "high data rate" communication systems, disclosed in U.S. patent application entitled "Method and Apparatus for High Rate Packet Data Transmission," Serial No. 08/963,386 filed on November 3, 1997, now U.S. Patent No. 6,574,211, issued 6/3/2003, and assigned to the assignee of the present invention. The disclosure in that patent application is also hereby fully incorporated by reference into the present application.

On page 9, please replace paragraph [1028] with the following paragraph:

In FIG. 1, using the arrival time of the strongest Rake finger is a known method for establishing a delay offset for fractionally spaced equalizer 150. This method centers fractionally spaced equalizer 150 about the region of the channel response containing the most energy. As such, fractionally spaced equalizer 150 equalizes most of the channel response because pre-cursor and post-cursor ISI are usually in the vicinity of the strongest Rake finger. Thus,

assuming a stationary channel response, fractionally spaced equalizer 150, in general, cancels most of the [[most]] distorted portion of the signal.

On page 10, please replace paragraph [1032] with the following paragraph:

One method to lessen the occurrence of timing adjustments is to make the loop time constant of strongest finger time tracking module 140 larger. The loop time constant would have to be made large enough such that the timing adjustment made by <u>the</u> strongest finger time tracking module 140 is slow enough for the adaptive algorithm of fractionally spaced equalizer 150 to adapt to. However, this approach can present a problem, because the tracking performance of the strongest finger is degraded. If either Rake finger 122 or 124 is unable to track quickly enough, then Rake finger 122 or 124 could lose lock, respectively.

On page 12, please replace paragraph [1036] with the following paragraph:

In the next instance, plot 220, peak 224 has diminished in strength and peak 222 is now the strongest peak. Consequently, strongest finger time tracking module 140 will select Rake finger 124 as the strongest Rake finger. Peak 222 can be at a delay of several chips away from peak 224. Thus, the delay offset of fractionally spaced equalizer 150 will have changed by several chips. The MMSE filter coefficients for fractionally spaced equalizer 150 with a delay offset equal to the arrival time for peak 222 will be very different from the MMSE filter coefficients for fractionally spaced equalizer 150 with a delay offset equal to the arrival time of peak 224. In [[a]] <u>an</u> HDR CDMA system, it can take several slots for the equalizer to adapt to what it effectively perceives as a drastic change in the channel characteristics. The symbol error rate can increase significantly if the filter's coefficients are far from their MMSE settings for several frames.

On page 15, please replace paragraph [1045] with the following paragraph:

One embodiment may use the weighted mean arrival time derived from Rake fingers 322 and 324 as the delay offset for fractionally spaced equalizer 350 rather than the delay offset of the strongest Rake finger. The weighted mean arrival time of Rake fingers is determined by the following steps:

1) using the arrival time of Rake finger i, determine the normalized signal energy strength, $f_i(n)$, of the Rake finger with respect to the total signal energy strength of all Rake fingers, where "n" designates the slot number discussed in more detail below. Assuming there are M active Rake fingers in Rake processor 320, the normalized signal energy strength for Rake finger i is determined as:

$$f_i(n) = \frac{s_i(n)}{\sum_{i=1}^{M} s_i(n)},$$

where $s_i(n)$ is the energy of the i-th RAKE finger[[.]];

2) multiplying the normalized signal energy of Rake finger i, $f_i(n)$ by the arrival time of Rake finger i. The product is the weighted arrival time of Rake finger i;

3) repeating step 1 and 2 above for each Rake finger; and

4) summing the weighted arrival times of each Rake finger to form the weighted mean arrival time.

Summarizing the steps above, the weighted mean arrival time is determined as,

$$\tau(n) = \sum_{i=1}^{M} f_i(n)\tau_i(n),$$

where τ_i is the arrival time of the ith Rake finger.

On page 16, please replace paragraph [1049] with the following paragraph:

For baseband receiver 300, it is desirable to change the delay offset of fractionally spaced equalizer 350 only if the statistically derived arrival time, such as weighted mean arrival time, changes by more than a tap-spacing. This is because an infinite-length FSE can correct for any timing error by synthesizing the appropriate delay through its MMSE coefficient settings. This roughly holds true for a finite-length FSE as long as the equalizer is broadly centered around the channel's impulse response. This can be implemented conveniently in any communications system that has slotted data frames at the physical layer. One example of such a system is the HDR CDMA system.

On page 21, please replace paragraph [1064] with the following paragraph:

In step 620, the coefficients of fractionally spaced equalizer 350 are time delayed by Q(|X|) taps[[ ]]. Let h(*k,n*) denote the *k*-th filter coefficient at slot *n*. Then, h(*k,n+1*) is formed from h(*k,n*) as follows: for *k=Q(|X|)* to *N-1*, h(*k,n+1*) is set equal to h(*k-Q(|X|),n*); for k=*0* to Q(|*X*|*)-1*, h(*k,n+1*) is set equal to zero. The filter coefficients after the update are h(k,n+1) and the weighted mean time tracking module 340 proceeds to the end of the procedure at step 622. Thus, in the manner described above, the invention provides method and apparatus for determining a delay offset in a fractionally spaced equalizer.